ISPyB user manual





Table of content (1/2)

Part I: Web Interface Description	4		
Login	5	-Search -> Protein or sample	22
General homepage	6	-Update database	23
Lab-contact homepage	7	Prepare Experiment homepage	24
Shipment homepage	8	-Select Dewars	25
-Create -> shipment	9	-Fill sample changer	26
-Create -> Puck	12	-View selected dewar	27
-Create -> CSV upload	13	Data collection homepage	28
-View -> Shipments	14	-View session report	29
-View -> Dewars	15	-View collections groups	30
- View -> Shipments or dewars-> View samples	16	-View collections	31
- Search -> Shipments or Dewars	17	-Search data collections	32
Samples homepage	18	Feedback homepage	33
-Create -> New sample	19	References homepage	34
-Create -> New crystal form	20	Help homepage	35
-View -> Protein and crystal forms	21		

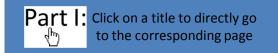
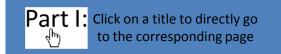


Table of content (2/2)

Part II: How to's	36	
Track your shipment:		
- Procedure summary	37	Search the database – Protein/ Sample
-Create a lab contact	38	Populate your sample list in MXcube with your ISPyB samples
-Create a shipment	39	Rank samples based on characterisation or autoprocessing results
-Print your labels	40	autoprocessing results
-Tracking (first option)	41	View your experiment and beamline parameters
-Tracking (second option)	42	View your processing results- EDNA characterisation
Describe the samples of your shipment:		View/ Download all autoprocessing files for one data collection
-Procedure summary	43	View/ Download specific autoprocessing results
-On-line creation	44	View your workflow results – Mesh scan and x-Ray centring
-Excel upload	46	Extract reports
-CSV upload	48	
Attach a new crystal form to a protein	49	
Upload a PDB file in view of automatic phasing (DIMPLE)	50	
Search the database – Shipment/ Dewar/ Data collection	51	



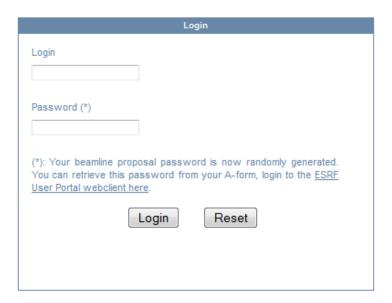


ISPyB user manual

Part I: Web Interface Description

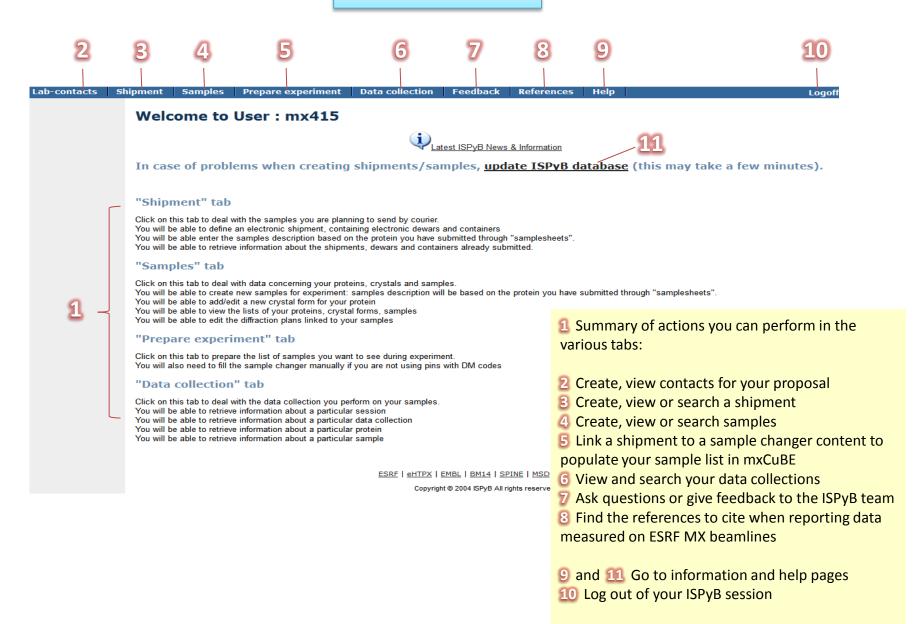


ISPyB Login



Use your ESRF experiment number (i.e. mx123, ix123, fx123) and password to log in

General Homepage



Lab-contacts tab



- 1 Previously created lab-contacts
- 2 Create a new lab-contact
- 3 Go back to you lab-contact table (1)
- 4 Edit or remove an existing lab-contact

Shipment tab: Homepage

Shipment

Lab-contacts Shipment Samples Prepare experiment Data collection Feedback References Help Logo

▶ Create

Shipment

• Puck

CSV upload

▶ View

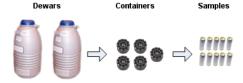
ShipmentsDewars

_ ----

Search

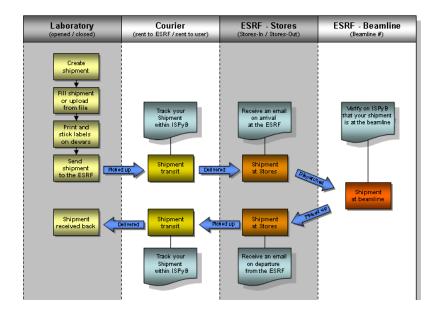
ShipmentDewar

A **Shipment** consists of a set of Dewars which is sent from your home lab to the synchrotron via a courier company. Each dry shipping **Dewar** within the shipment is identified by a label (barcode or sticker). The dewars(s) contains a set of Containers (Baskets or canes). **Containers** (typically Baskets), contain Samples. A **Sample** (Sample Holder) contains the **Crystal**.



Tracking your shipment & contents (Dewars, toolboxes etc) allows you to follow the progress of your shipment from your home Lab to The ESRF. This feature also provides for:

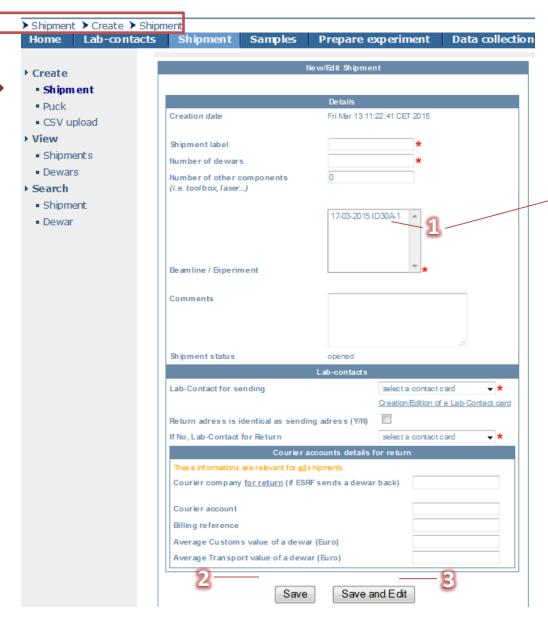
- . Generation of Dewar and shipment labels for sending your shipment by courier
- Notification by email of your shipment arrival and departure from The ESRF. Returned shipment notifications also include the
 courier tracking number to allow you to track the shipment while in transit back to your home laboratory
- · Location of your shipment at The ESRF

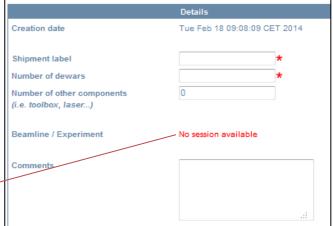


- 1 Summary of the shipment tracking system put in place at ESRF
- 2 Create a shipment or a puck
- 3 View existing shipments or dewars
- 4 Search for a shipment or a dewar



Shipment tab: Create-> Shipment

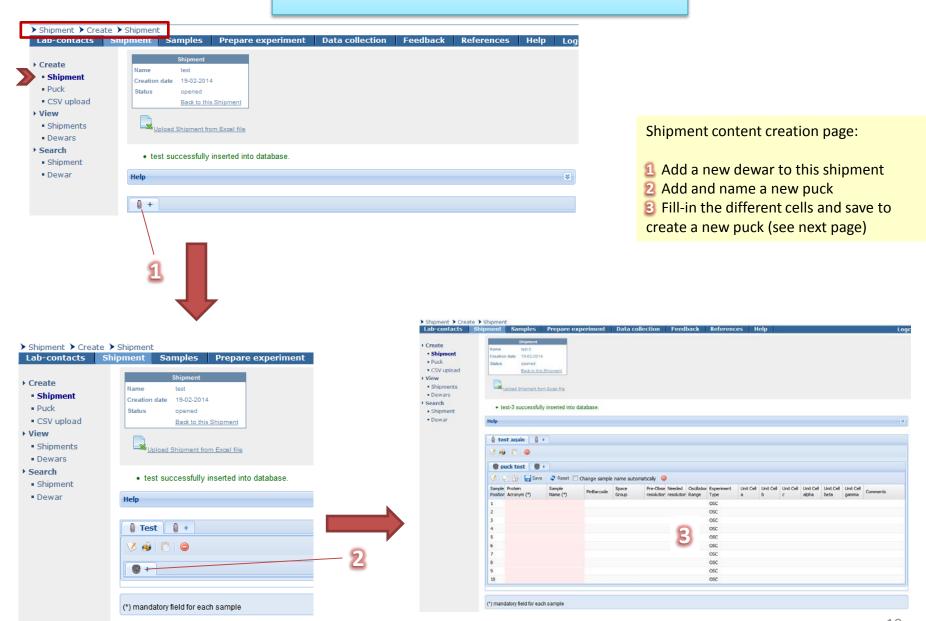




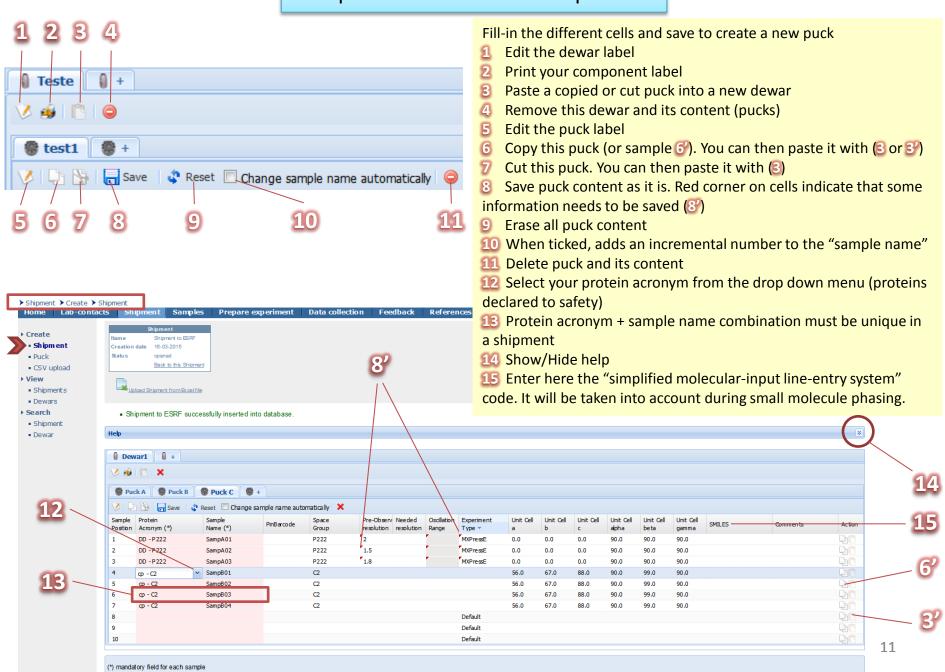
Fill-in the different parameters and save to create a new shipment

- 1 An experiment session has to be scheduled and selected in the SMIS system in order to link your shipment with that session
- 2 Save the shipment and redirect you to view that shipment where you can print your tracking label
- 3 Save the shipment and redirect you to the shipment content creation page where you will be able to describe your samples

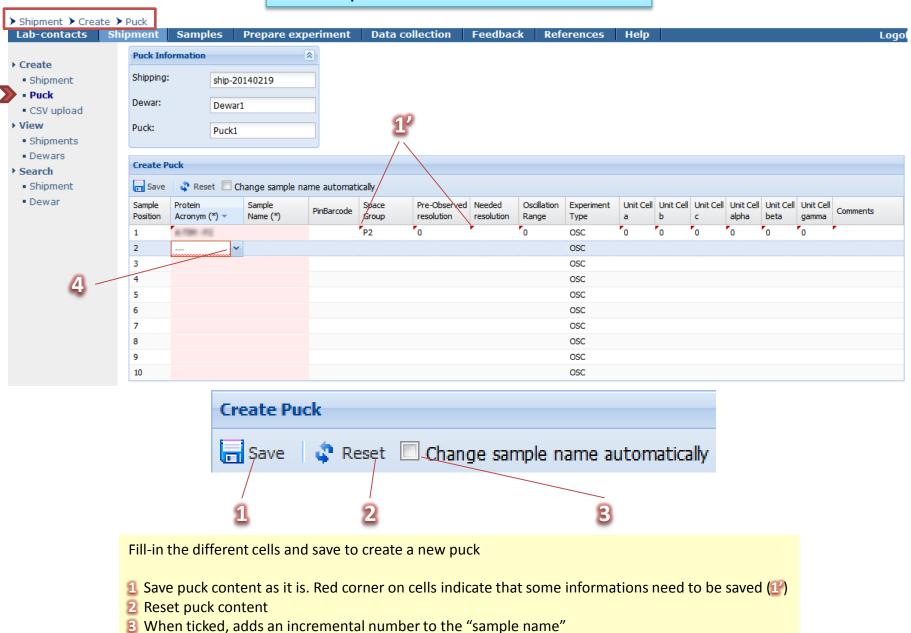
Shipment tab: Create -> Shipment



Shipment tab: Create -> Shipment

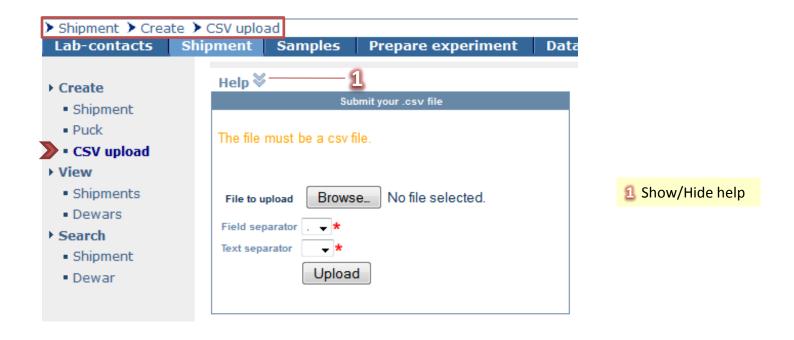


Shipment tab: Create-> Puck



4 Select your protein acronym from the drop down menu

Shipment tab: Create -> CSV upload

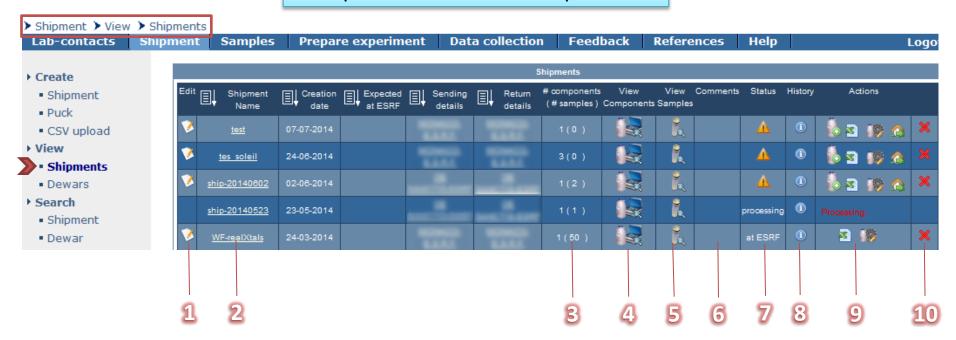


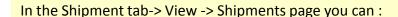
CSV File example in Excel:

	Α	В	С	D	Е	F	G	Н	1	J	K	L	M	N	0	Р	Q	R	S	T	U	V
1	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample01	1		90	90	90	90	90	90
2	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample02	2		90	90	90	90	90	90
3	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample03	3		90	90	90	90	90	90
4	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample04	4		90	90	90	90	90	90
5	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample05	5		90	90	90	90	90	90
6	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample06	6		90	90	90	90	90	90
7	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample07	7		90	90	90	90	90	90
8	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	CMY-10	beta-lactamase	P41212	0	sample08	8		90	90	90	90	90	90
9	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	CMY-10	beta-lactamase	P41212	0	sample09	9		90	90	90	90	90	90
10	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	CMY-10	beta-lactamase	P41212	0	sample10	10		90	90	90	90	90	90
11	mx	123	1	ship-20140214	Dewar1	Puck2	3	2.1	0.5	t2	thiolase	C222	0	s01	1		90	90	90	90	90	90
12	mx	123	1	ship-20140214	Dewar1	Puck2	3	2.1	0.5	t2	thiolase	C222	0	s02	2		90	90	90	90	90	90
13	mx	123	1	ship-20140214	Dewar2	Puck3	3	2.1	0.5	t2	thiolase	C222	0	test01	1		90	90	90	90	90	90
14	mx	123	1	ship-20140214	Dewar2	Puck3	3	2.1	0.5	t2	thiolase	C222	0	test02	2		90	90	90	90	90	90

Upload your CSV file to create a new shipment

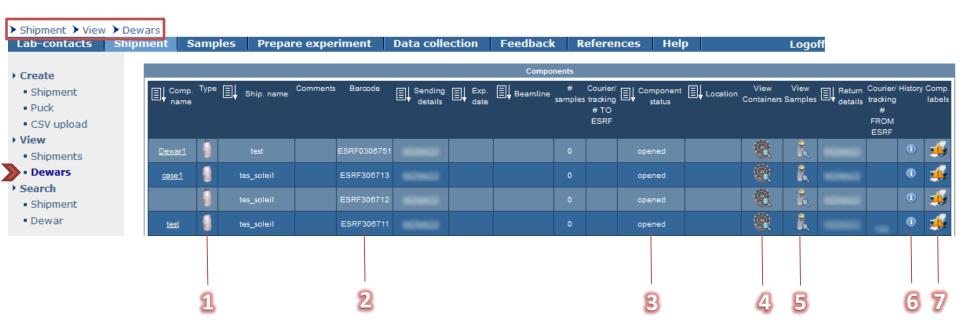
Shipment tab: View -> Shipments





- 1 Edit an existing shipment (attach it to another session, change the transport details or comments)
- 2 and 4 List the component details of that shipment
- 3 List the number of components and samples already registered for this shipment
- 5 View all samples of that shipment
- 6 Comments that can be edited during shipment creation or in (1)
- View your shipment status (sent to ESRF, at ESRF, not complete or processing)
- 8 View the shipment information and dewar history
- 9 Actions that can be performed on your shipment: add a dewar, upload its content from XLS files, edit its content, put it in 'sent to ESRF" mode. These icons are replaced by processing if is has been used on the beamline
- 10 Delete that shipment 1 If you have data collected for this shipment, this will delete them!!

Shipment tab: View -> Dewars



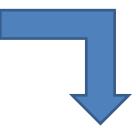
In the Shipment tab -> View -> Dewars page you can:

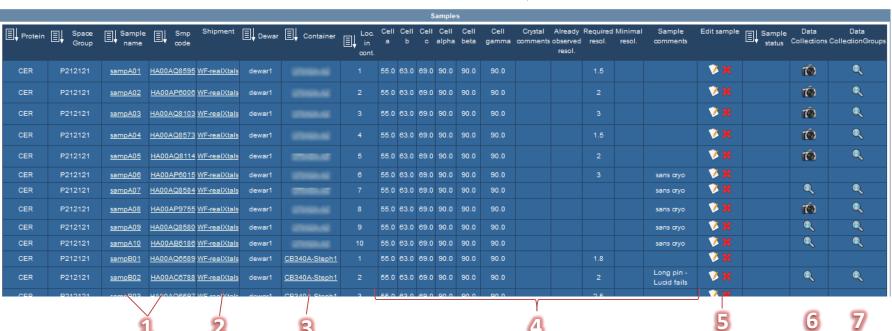
- 1 View the type of component included in all your shipments (dewars or other)
- 2 View the barcode issued for that shipment for tracking purpose (tracking sheet printable from (6))
- 3 Check your component status (opened, ready to go, at ESRF, sent to user, closed)
- 4 List the pucks of this dewar
- 5 List the samples of dewar
- 6 View your component history
- Print you component label



Shipment tab: View -> Shipments or Dewars

-> View samples

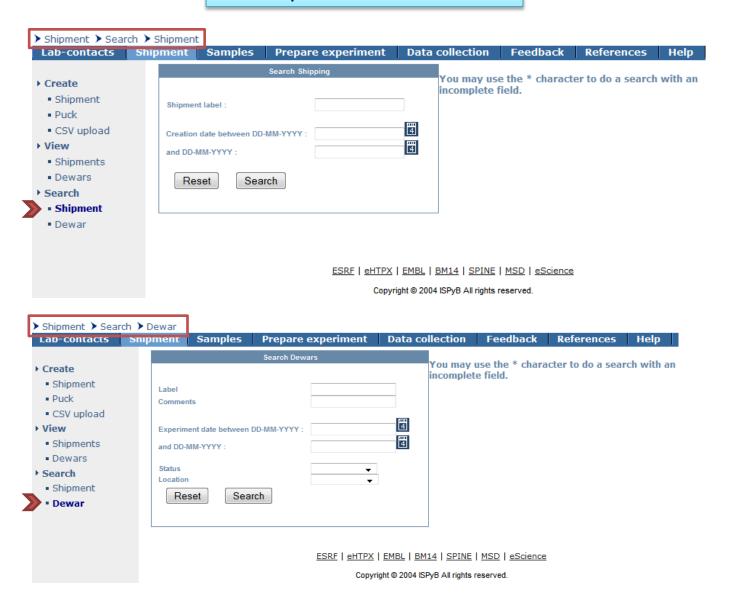




From the Shipment-> View -> Shipments page you can go to a summary page of the samples registered in one shipment:

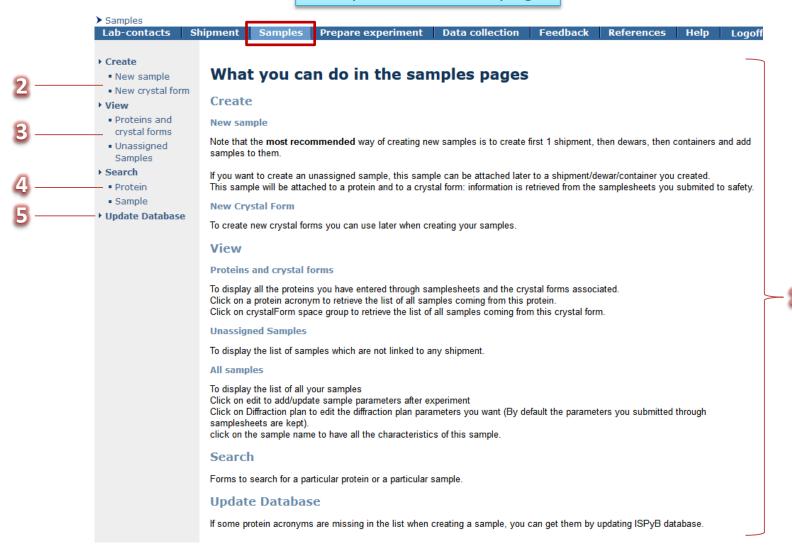
- 1 Click on link to open the sample detail page
- 2 Click on link to open the shipment detail page
- 3 Click on link to view all the samples in this dewar
- 4 Parameters and comments previously entered when creating the sample
- 5 Edit or delete this sample
- 6 View the data collections
- 7 View collection summary by group (sample name, experiment type...)

Shipment tab: Search



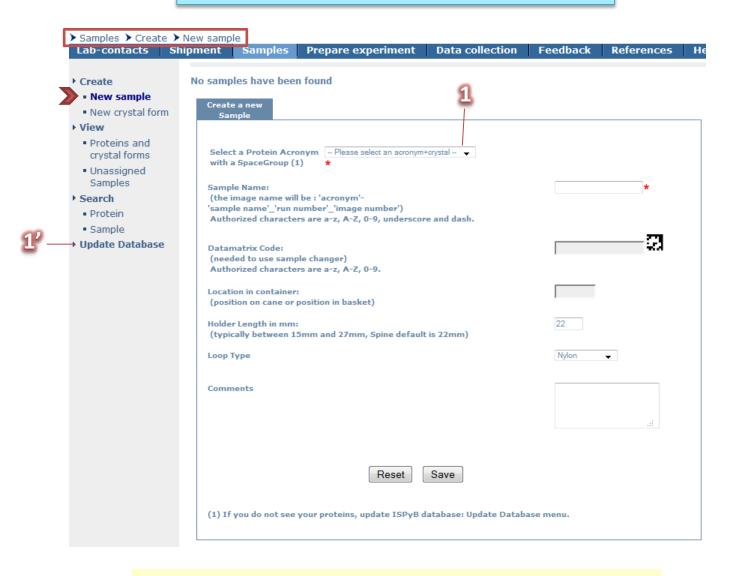
Use these pages to search a particular shipment or a dewar

Samples tab: Homepage



- 1 Summary of the actions you can perform under the samples tabs
- 2 Create a sample or a crystal form for a protein
- 3 View existing protein crystal forms or unassigned samples (not attached to a shipment
- 4 Search for a protein (by its acronym) or a sample (by its barcode or name)
- 5 Retrieve the protein acronyms from your sample sheets newly submitted in the SMIS database

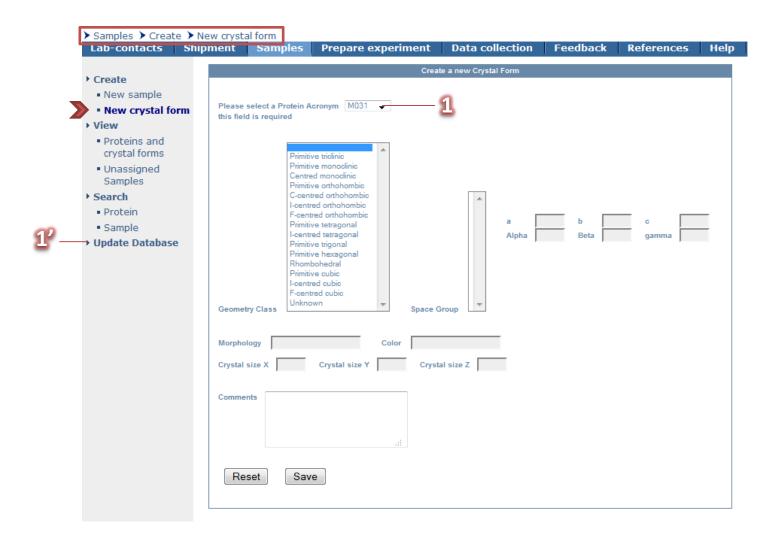
Samples tab: Create -> New sample



Use this form to create a new sample related to your protein

 $oldsymbol{1}$ If you don't find your protein in the list on the left, update the database $oldsymbol{(1')}$

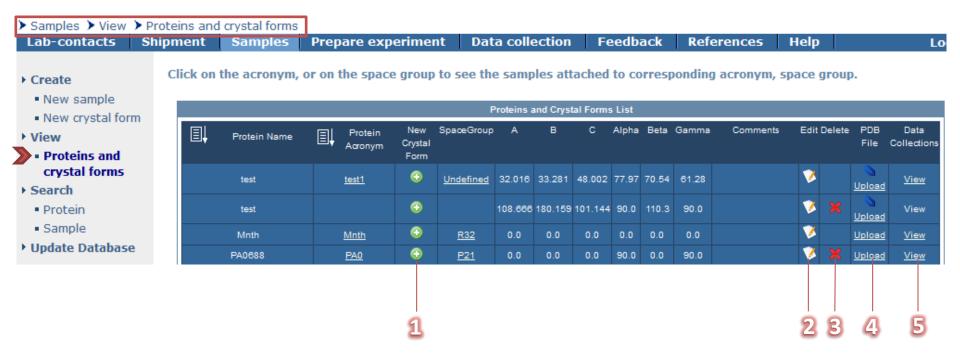
Samples tab: Create -> New crystal form



Use this form to create a new crystal form related to your protein

1 If you don't find your protein here, update your ISPyB database (1)

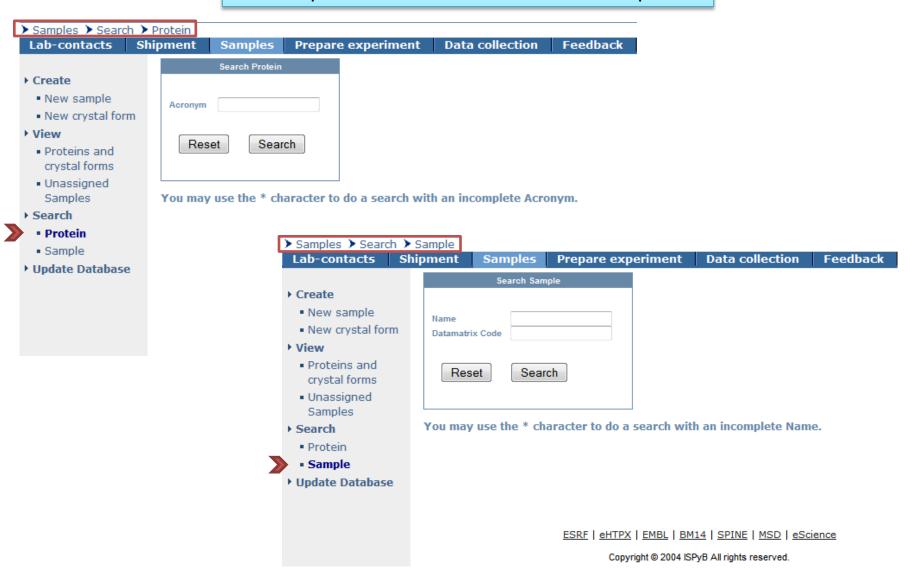
Samples tab: View-> Protein and crystal forms



Allows you to view all proteins and their associated crystal forms

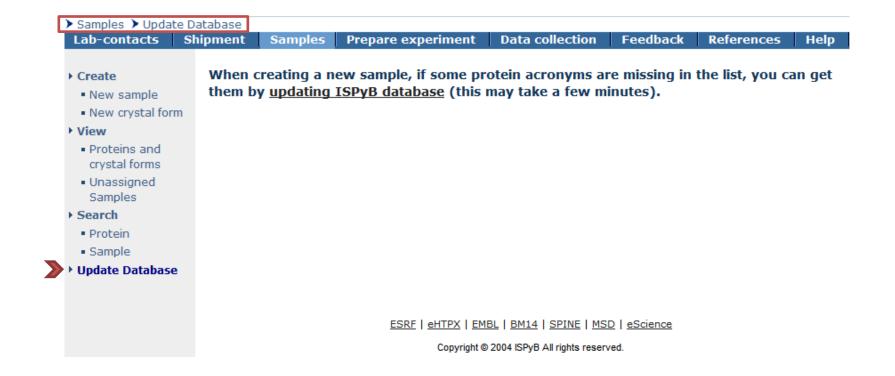
- 1 Create a new crystal form for that protein
- Edit this crystal form
- 3 Delete this crystal form
- 4 Upload the corresponding PDB file (for Autoprocessing purposes)
- 5 View all the data collections measured for that crystal form of that protein

Samples tab: Search -> Protein or sample



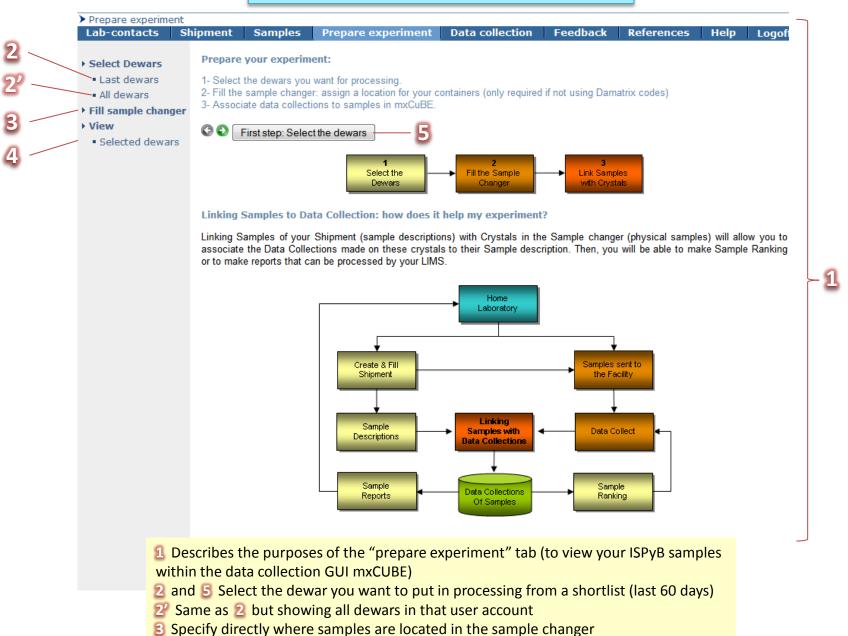
Use these pages to search for a particular protein or a sample

Samples tab: Update Database



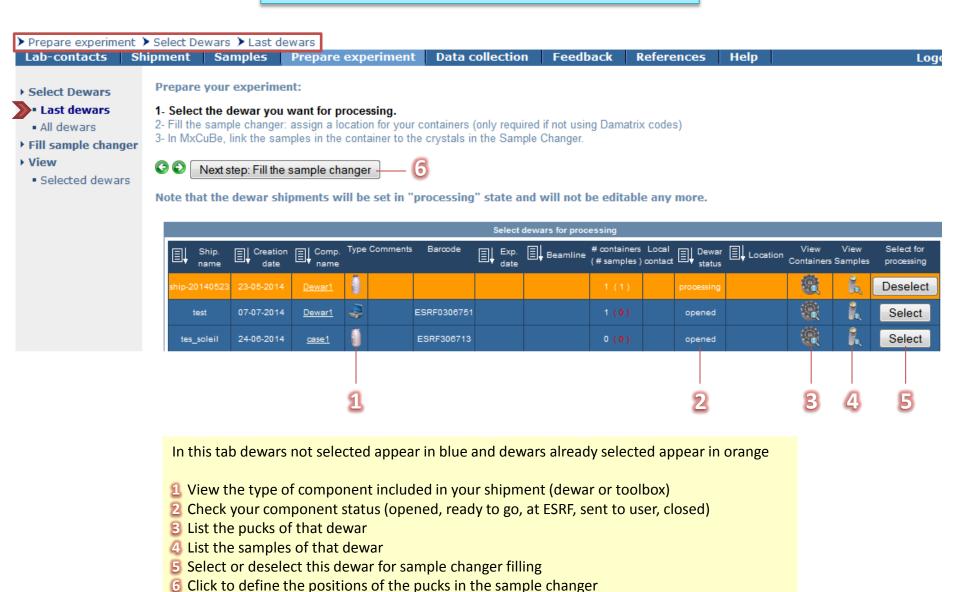
Click on "<u>updating ISPyB database</u>" to retrieve protein acronyms from recent submitted safety sheets in the SMIS database (synchronisation with SMIS database)

Prepare experiment tab



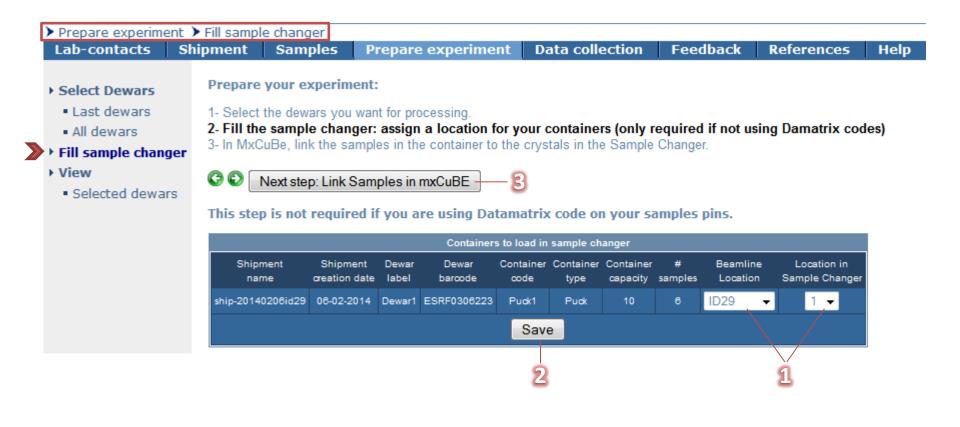
6 View dewar(s) selected in 2.

Prepare experiment pages – Select Dewars



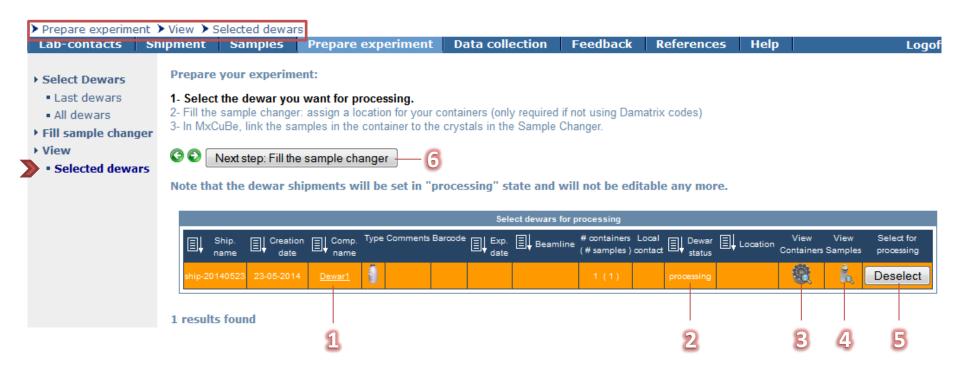
Tip: If you do not see a dewar that you have already created, click on "All dewars"

Prepare experiment tab: Fill sample changer



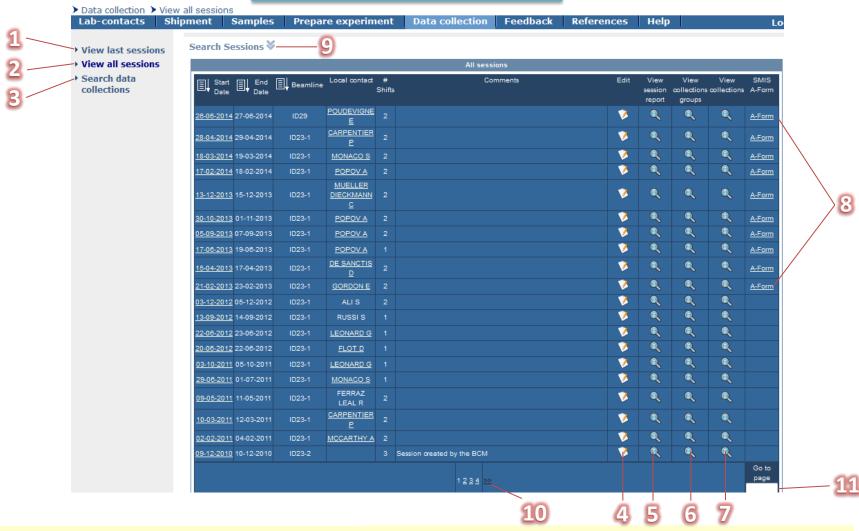
- 1 Enter the beamline location and the sample changer position of the puck
- 2 Save the pucks location
- 3 Click here to view a guide on how to view your selected samples in MXCuBE

Prepare experiment tab: View



Here you can view the list of the previously selected dewars
 and 3 List the content (pucks) of that dewar
 Check your dewar status (opened, ready to go, at ESRF, sent to user, processing, closed)
 View the samples registered in this dewar
 Select or deselect this dewar to view it in MXCuBE (beamline control software)
 Click to define the positions of the pucks in the sample changer

Data collection tab

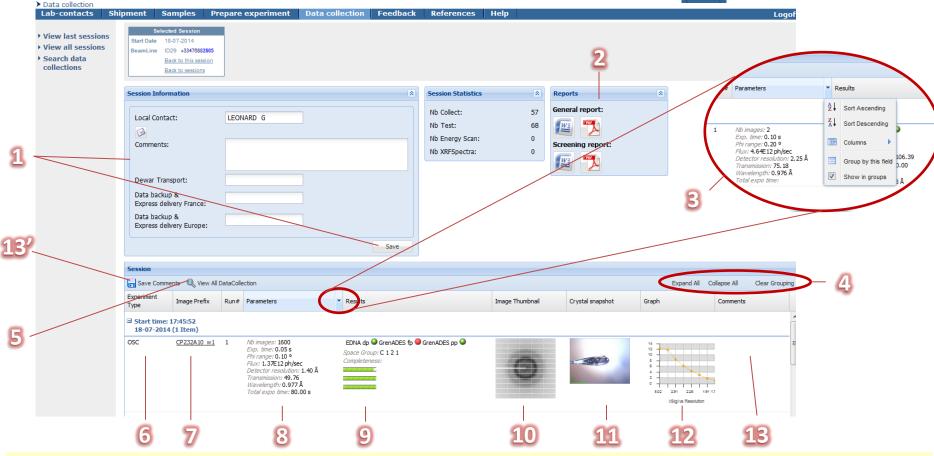


- 1 View your 20 last sessions
- 2 View all your sessions
- 3 Search for a specific data collection or a set of data collections
- 4 Add comments to this session
- 5 View reports (parameters, snapshot, autoprocessing...) for a specific session

- 6 View collection summary by sample
- 7 View a chronological summary of your collects and detailed autoprocessing results
- 8 View the A-form (SMIS) corresponding to that session
- 9 Filter the sessions by date and/or beamtime
- 10 and 11 View a specific page of the session list

Data collection tab: view session report



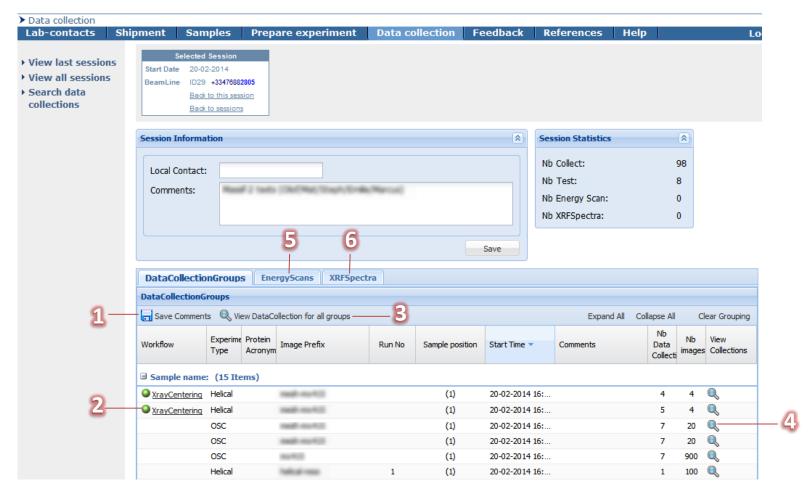


- 1 Add comments about this session and save
- 2 Download collection reports of different kind and of various formats
- 3 Click on the right end of the title row to set the parameters grouping/sorting
- NB: You can order the columns as you wish by dragging the title where you want
- 4 Expand/ collapse all lines or clear the parameters grouping
- 5 View chronological data collection for that session and basic autoprocessing results

- 6 Experiment type (OSC=standard collection, characterisation...)
- 7 Click here to view all the details of this experiment (parameters, autoprocessing results...)
- 8 Experiment parameters
- 9 View collection autoprocessing status and results
- 10 Click on the diffraction thumbnail to view full size image
- Click on the crystal snapshot to view full size image
- 12 Click on the analytical graph to view full size image
- 13 Add comments about this data collection and save (13')

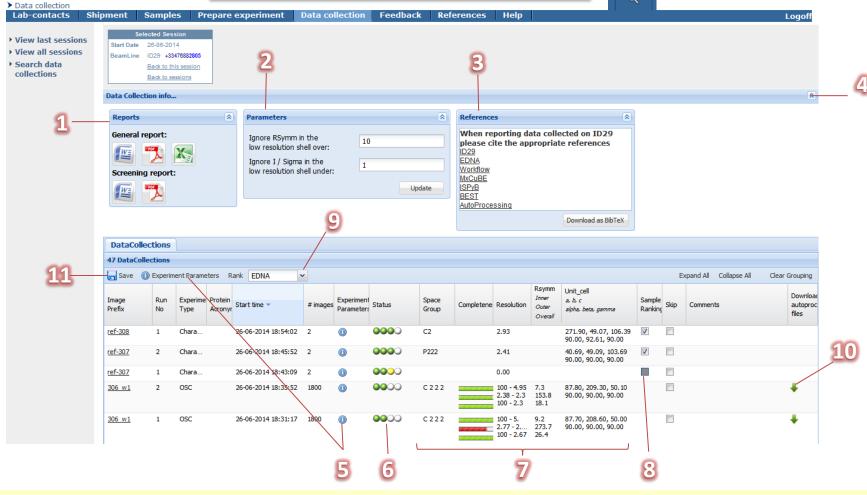
Data collection tab: view collections groups





- Save comments
- 2 Click to view the data collections associated with that of that workflow (collects, images, results)
- 3 View chronological data collection for that session and basic autoprocessing results
- 4 View your collections
- 5 Energy scans for that session
- 6 XRF spectra for that session

Data collection tab: view collections



- 1 Download reports for that session in various formats
- 2 Tunable parameters for the autoprocessing results summary display
- References to quote for the publication of your results collected at ESRF
- 4 Show/ Hide data collection info
- 5 Show experiment parameters table (wavelength, transmission, exposure time, Phi start, Phi range and detector resolution)

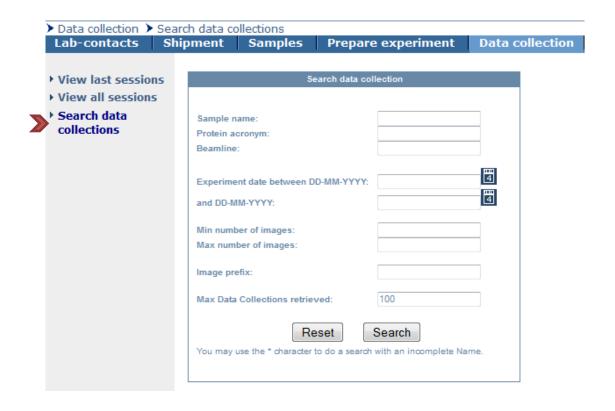
6 View collection status (snapshot, data collection, indexing, autoprocesing)

View collection

Q

- 7 Best autoprocessing summary
- 8 Select that characterisation for ranking
- Start sample ranking
- 10 Download the autoprocessing files for that collect
- 11 Save your comments

Data collection tab: Search data collections



Use this form to look for specific data collection(s)

Feedback tab

▶ Feedback

Lab-contacts	Shipment	Samples	Prepare experiment	Data collection	Feedback	References	Help
	If you have	any questions	s of comments, feel free to sub	mit vour foodback:			
	ii you nave	any questions	s of comments, leer liee to sub	illit your reedback.			
			Submit your feedback				
	Your ema	il					
				.:1			
	Res	et Sub	mit your feedback				
			ESRF eHTPX EMBL BN	M14 SPINE MSD eSc	cience		
				SPyB All rights reserved.			

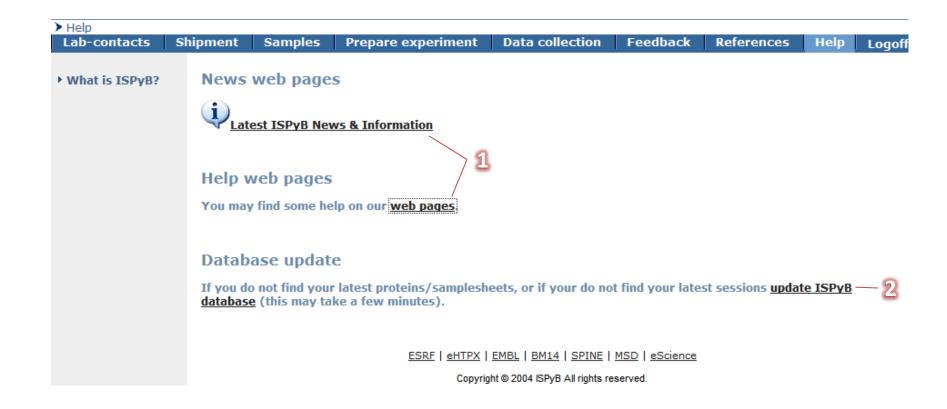
Use this form to give us feedback. We value your opinion and advices on ISPyB and we will use your feedback to improve its operation. We will be happy to help you use ISPyB if necessary.

References tab

> References References Lab-contacts **Shipment** Samples **Prepare experiment Data collection** Feedback When reporting data from the ESRF MX beamlines please cite the appropriate references: <u>™</u> I<u>D23-1</u> ID23-2 ID29 EDNA Workflow MxCuBE **ISPyB BEST** X-ray fluorescence spectra **AutoProcessing** Mesh scan Download as BibTeX ESRF | eHTPX | EMBL | BM14 | SPINE | MSD | eScience Copyright @ 2004 ISPyB All rights reserved.

List the references to quote when you report data from the ESRF MX beamlines

Help tab



- 1 Redirection to our web pages where you will find News, information and help pages
- 2 Click on this link to update the ISPyB database with new proteins (safety sheets) or new session which are stored in the SMIS database (an automatic update takes place every night)



ISPyB user manual

Part II: How to's



How to: Track your shipment through ISPyB Procedure summary







Tracking your shipment & contents (Dewars, toolboxes etc) allows you to follow the progress of your shipment from your home Lab to ESRF and back









How to: Track your shipment through ISPyB Create a lab contact

=> If your lab-contact already exists please go directly to step 2 . (The following lab-contact card already exists) New/Edit LabContact ▶ Lab-contacts ➤ Create ➤ LabContact Lab-contact card Lab-contacts Shipment Samples Prepare experin MONACO-E S R F Card name Contact person info New/Edit LabContact ▶ Create Family name MONACO First name Stéphanie LabContact Telephone Scientist name ▶ View Scientist firstname LabContacts Search contact Lab name Lab address (*) (*) address must fit in the text box without scrolling Courier accounts details for return · No match found in SMIS Database. hese informations are relevant for all shipments Courier company for return (if ESRF sends a dewar back) New/Edit LabContact undefined Courier account undefined Average Customs value of a dewar (Euro) Scientist name Monaco Average Transport value of a dewar (Euro) Scientist firstname Save card Search contact Select the scientist contact 1 Fill in scientist name and search the SMIS database for Scientist name Scientist first rame Action that particular proposal Lab name 2 If not found: select one person in your group and go to (3) If found: fill-in & save Select Select

Select

MONACO

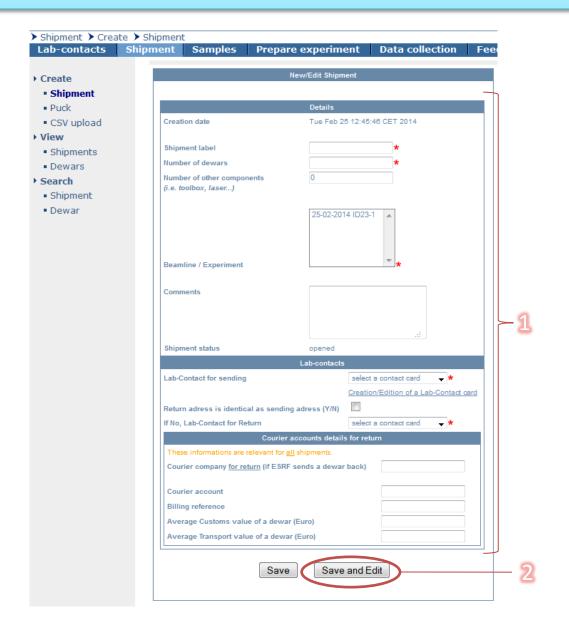
Stéphanie

ESRF

NOTE: this needs to be done only ONCE for your proposal

and for your LAB address

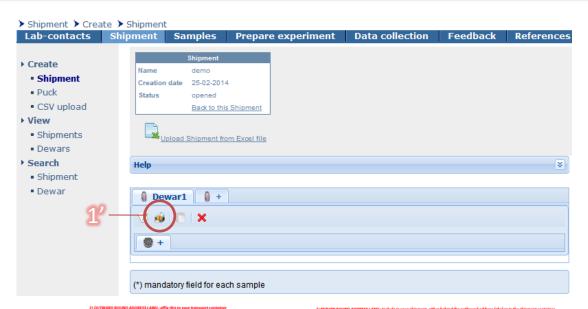
How to: Track your shipment through ISPyB Create a shipment

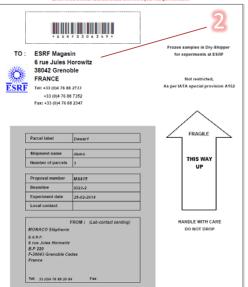


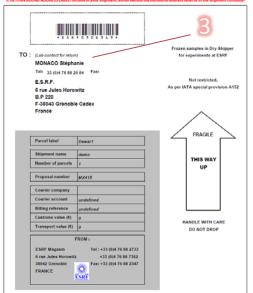
- 1 Fill in details with components & 2 dewars
- 2 Save & edit

NOTE: if in the field Beamline/Experiment "No session available" appears, please contact deborah.davison@esrf.fr to check that your experiment is scheduled in the SMIS system – If it is already scheduled but this was done during the day of the shipment creation, update ISPYB db with SMIS db info by clicking on 'Help tab' and update ISPYB database link

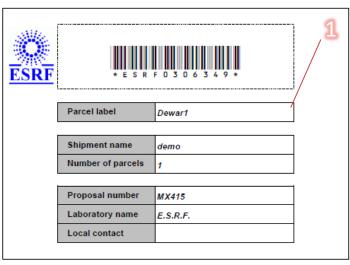
How to: Track your shipment through ISPyB Print your labels







1) DEWAR LABEL: affix this to your DEWAR

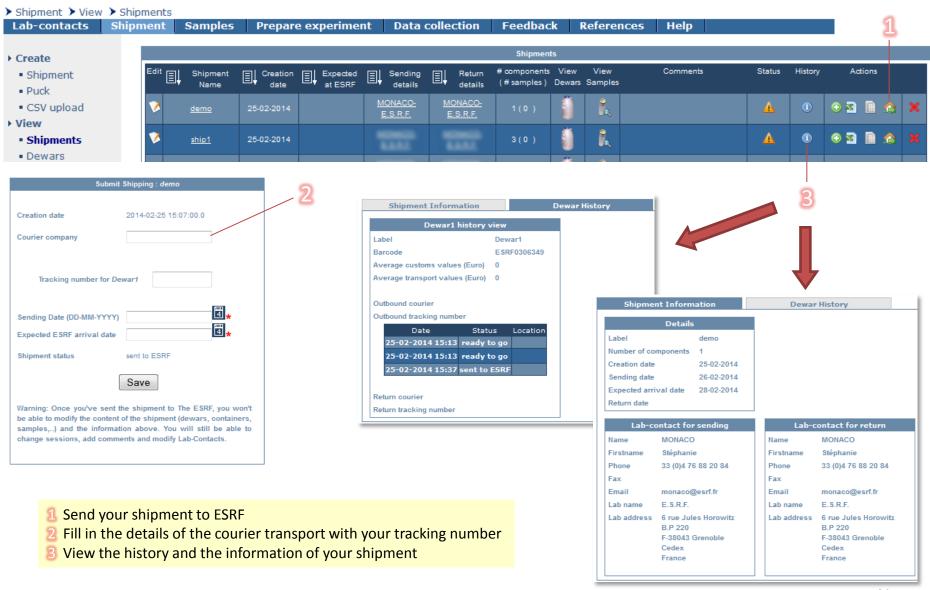


1 For each component, print the labels by clicking on the printer icon

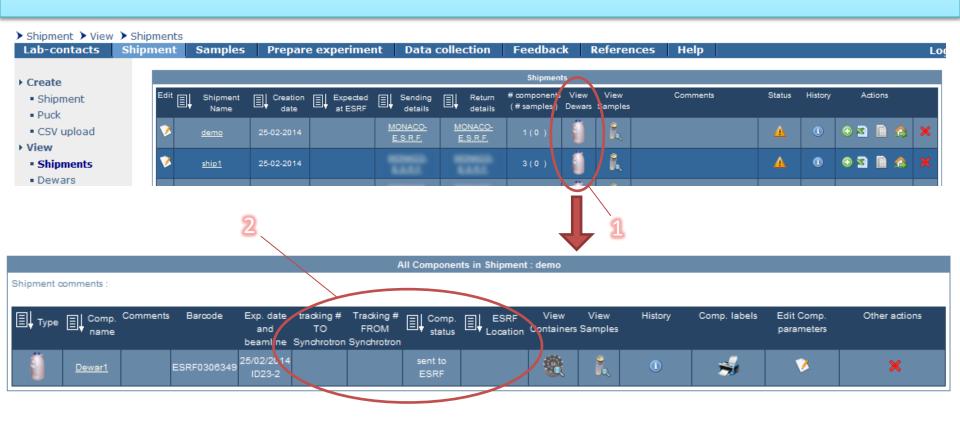
NB: This printer icon shows the attention sign until you have opened it once to print the labels

Once printed, stick label 1 and 2 to your dewar and box and put label 3 inside your dewar box for return (same action to do with any other shipment component like a backup in a box, a toolbox..)

How to: Track your shipment through ISPyB (first option)



How to: Track your shipment through ISPyB (second option)





- 1 Click here to open bottom tab
- 2 Follow your shipment transport status
- 3 E-mail received when your components arrive on-site

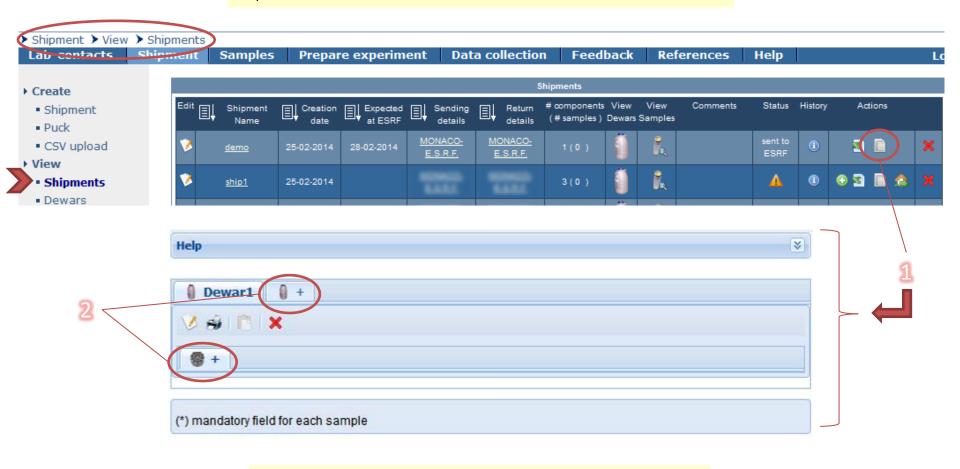
How to: Describe the samples in your shipment Procedure summary

This action requires steps 1 and 2 from the "How to ? : Track your shipment"

Option 1	Option 2	Option 3
On-line creation	Excel upload	CSV upload
• Fill in each puck of each dewar	 Download your template filled with your protein acronyms 	 Prepare a file of the type on your computer
SAVEView all your samples in a	 Fill the template outside ISPyB 	 Click on browse to select the file from your computer files
list or per puck	• Submit your .xls file	Describe the field & text
		separator types • Upload
		Орючи

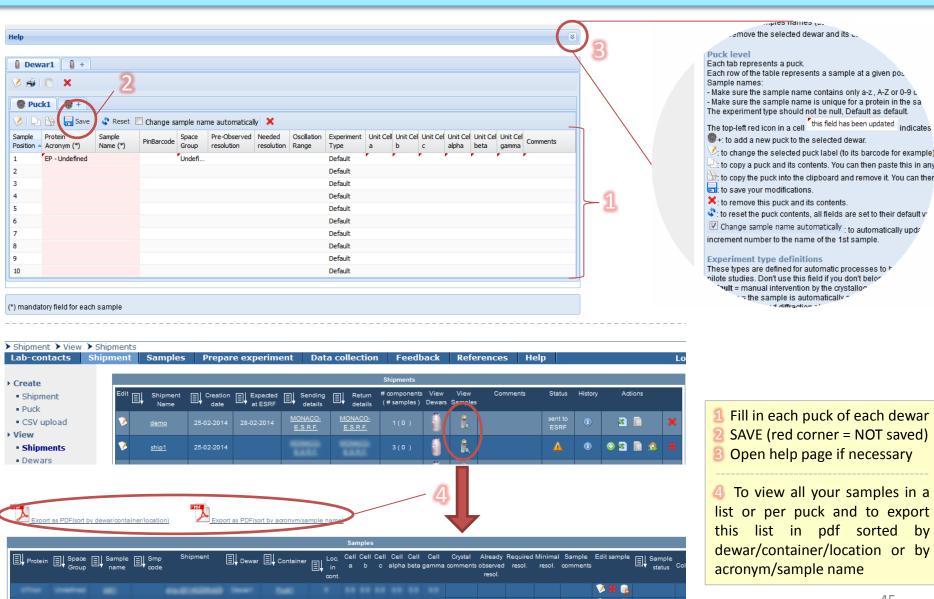
Describe the samples of your shipment On-line creation(1/2)

This action requires steps 1 and 2 from the "How to?: Track your shipment"



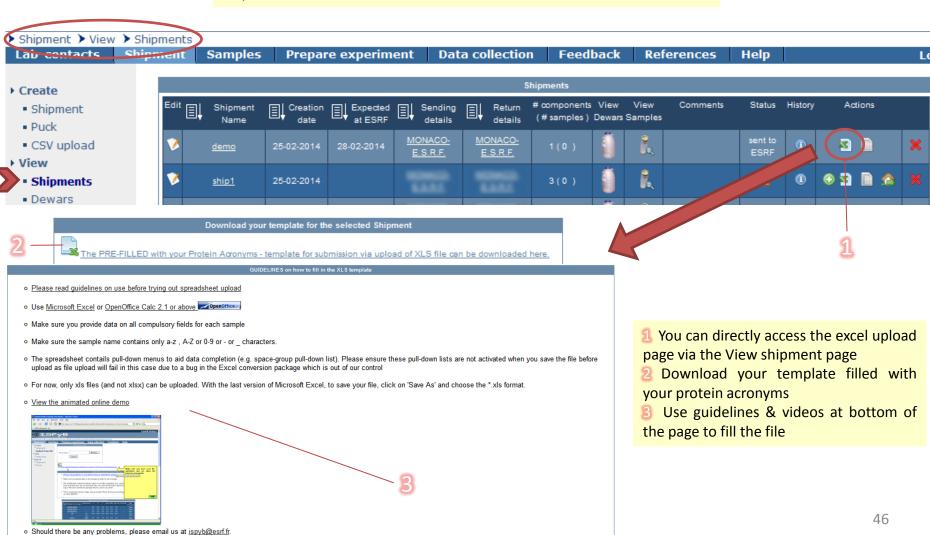
- 1 You can directly access creation page via the View shipment page
- 2 Create the dewars and pucks you will need

How to: Describe the samples of your shipment On-line creation(2/2)

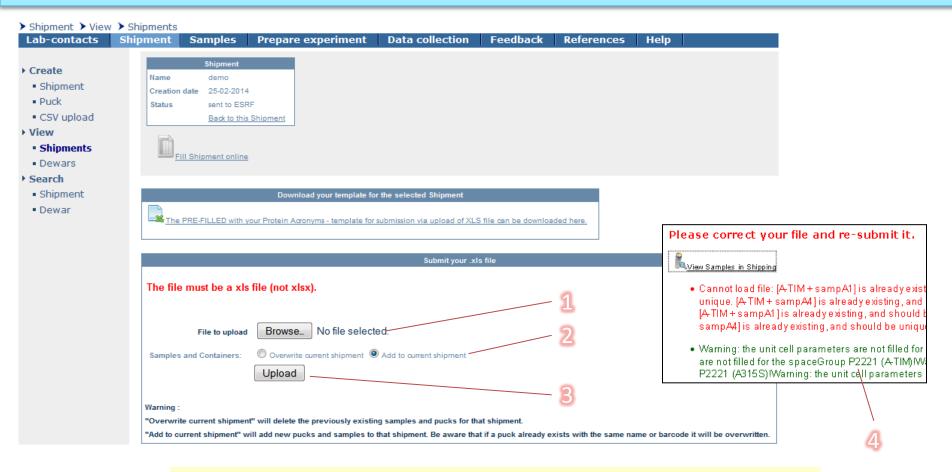


Describe the samples of your shipment Excel Upload (1/2)

This action requires steps 1 and 2 from the "How to?: Track your shipment"



Describe the samples of your shipment Excel Upload (2/2)

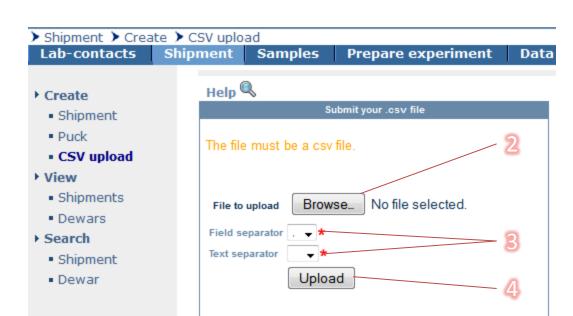


Submit your .xls file:

- 1 Click on "Browse" to select the file on your computer
- 2 Set the upload parameters: overwrite existing shipment content or add to current shipment
- 3 Upload
- 4 Example of error message that will appear if your file contains incorrect parameters NOTE: Make sure the uploaded file is of .xls format and not .xlsx format

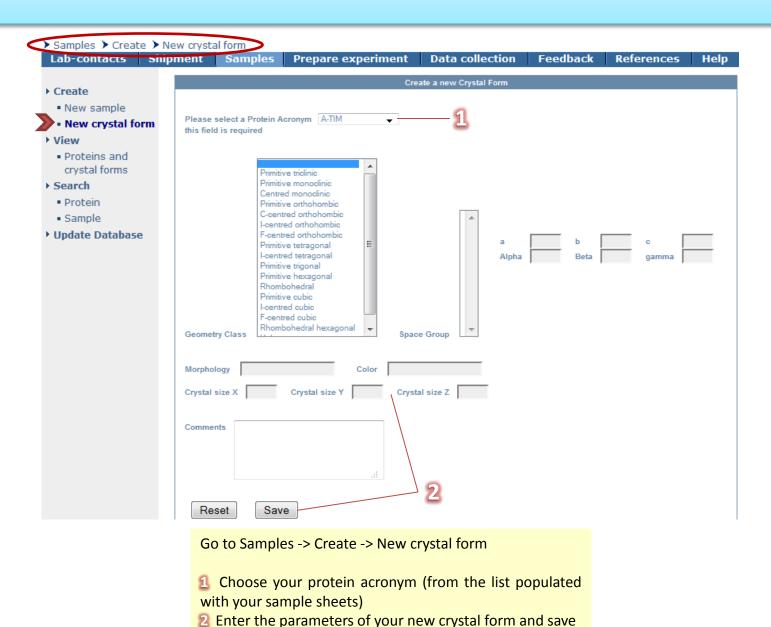
How to: Describe the samples of your shipment CSV Upload

	Α	В	С	D	E	F	G	Н	1	J	K	L	M	N	0	P O	R	S	Т	U	V
1	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample01	1	90	90	90	90	90	90
2	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample02	2	90	90	90	90	90	90
3	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample03	3	90	90	90	90	90	90
4	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample04	4	90	90	90	90	90	90
5	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample05	5	90	90	90	90	90	90
6	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample06	6	90	90	90	90	90	90
7	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	t2	thiolase	C222	0	sample07	7	90	90	90	90	90	90
8	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	CMY-10	beta-lactamase	P41212	0	sample08	8	90	90	90	90	90	90
9	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	CMY-10	beta-lactamase	P41212	0	sample09	9	90	90	90	90	90	90
10	mx	123	1	ship-20140214	Dewar1	Puck1	3	2.1	0.5	CMY-10	beta-lactamase	P41212	0	sample10	10	90	90	90	90	90	90
11	mx	123	1	ship-20140214	Dewar1	Puck2	3	2.1	0.5	t2	thiolase	C222	0	s01	1	90	90	90	90	90	90
12	mx	123	1	ship-20140214	Dewar1	Puck2	3	2.1	0.5	t2	thiolase	C222	0	s02	2	90	90	90	90	90	90
13	mx	123	1	ship-20140214	Dewar2	Puck3	3	2.1	0.5	t2	thiolase	C222	0	test01	1	90	90	90	90	90	90
14	mx	123	1	ship-20140214	Dewar2	Puck3	3	2.1	0.5	t2	thiolase	C222	0	test02	2	90	90	90	90	90	90

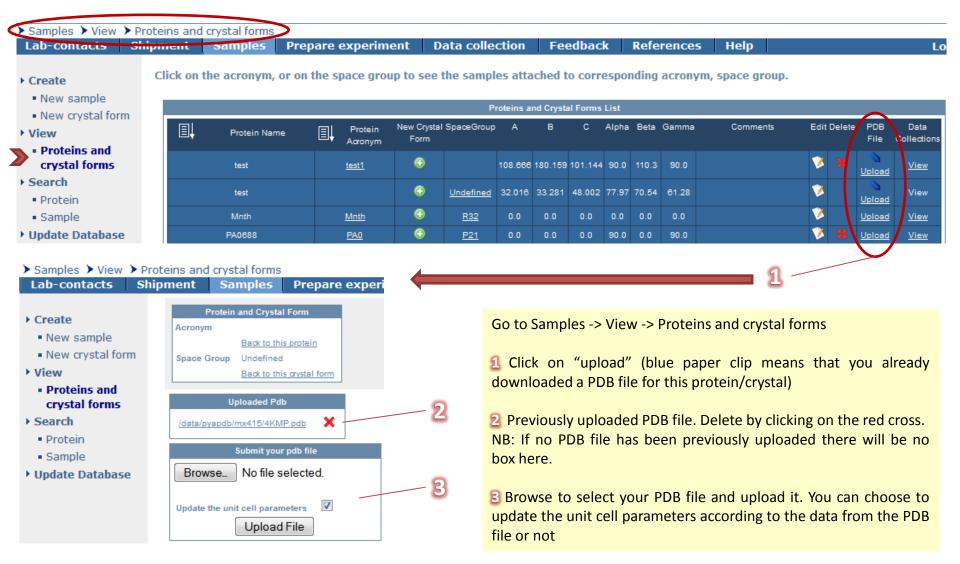


- 1 Prepare a file of this type on your computer
- 2 Select the file from your computer files
- B Describe the field & text separator types
- 4 Upload

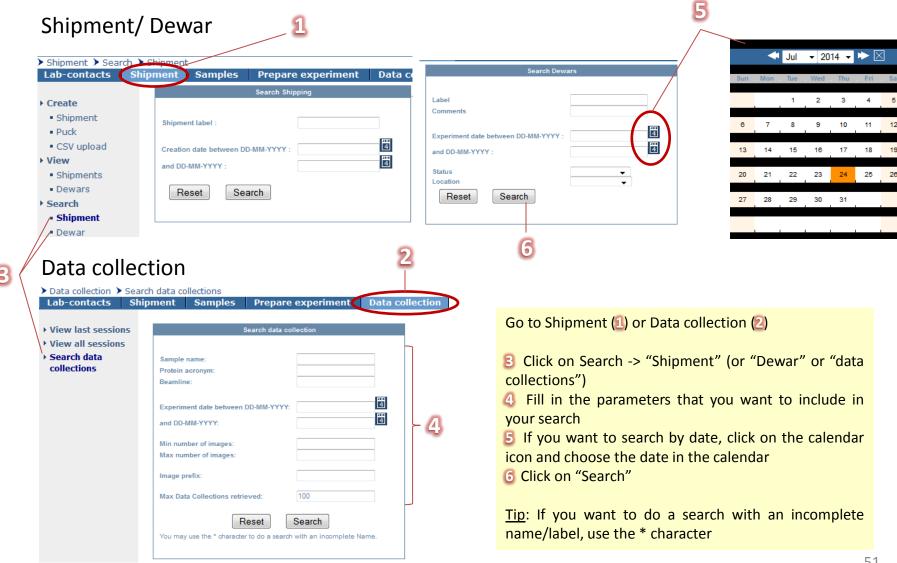
How to: Attach a new crystal form to a protein



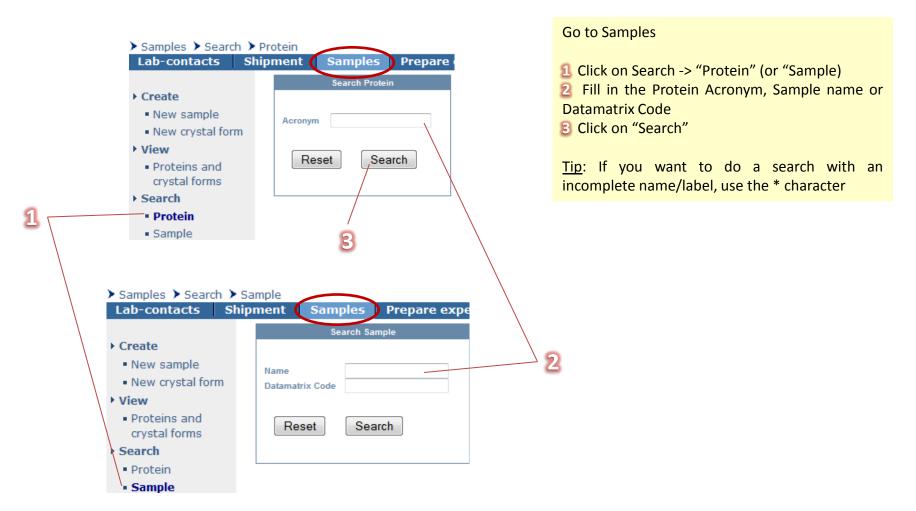
Upload a PDB file in view of automatic phasing (Dimple, autoMR, ...)



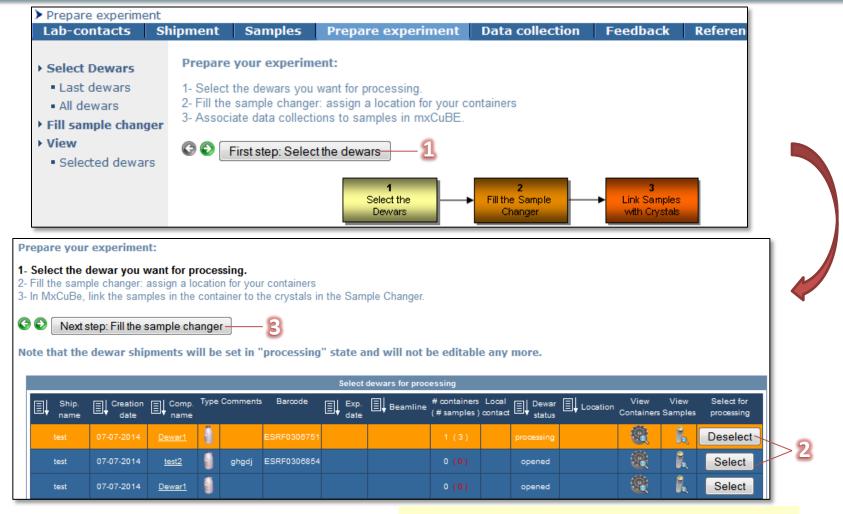
How to: Search the database Shipment/ Dewar and Data collection



How to: Search the database *Protein/sample*



Populate your sample list in MXCuBE (sample changer content) with your samples described in ISPyB (1/2)

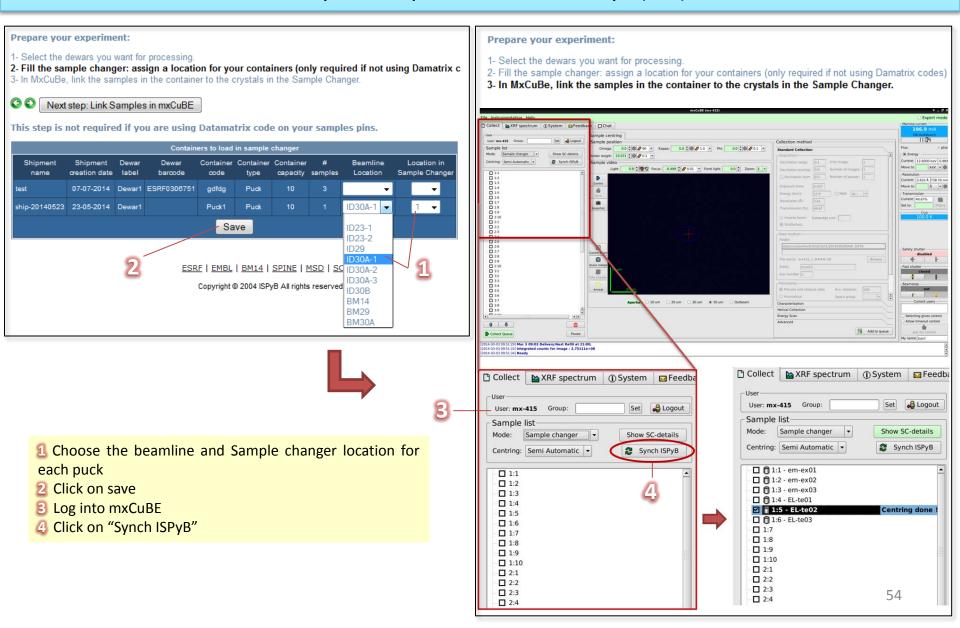


This action requires to have previously followed the "How to?: Track your shipment-> Create a shipment"

Go to Prepare experiment

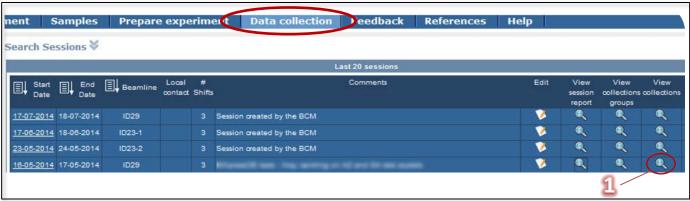
- 1 Click on "First step: Select the dewars"
- 2 Choose the dewar currently in use at the beamline
- 3 Click on "Next step: Fill the sample changer"

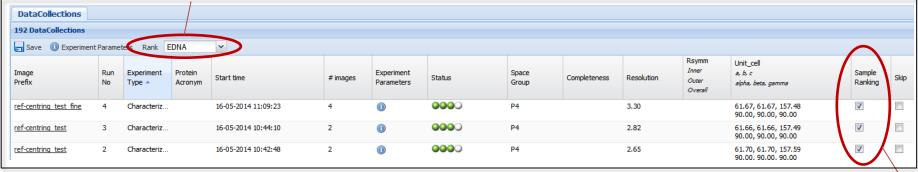
Populate your sample list in MXCuBE with your samples described in ISPyB (2/2)



View all your processing results for a session & rank your samples







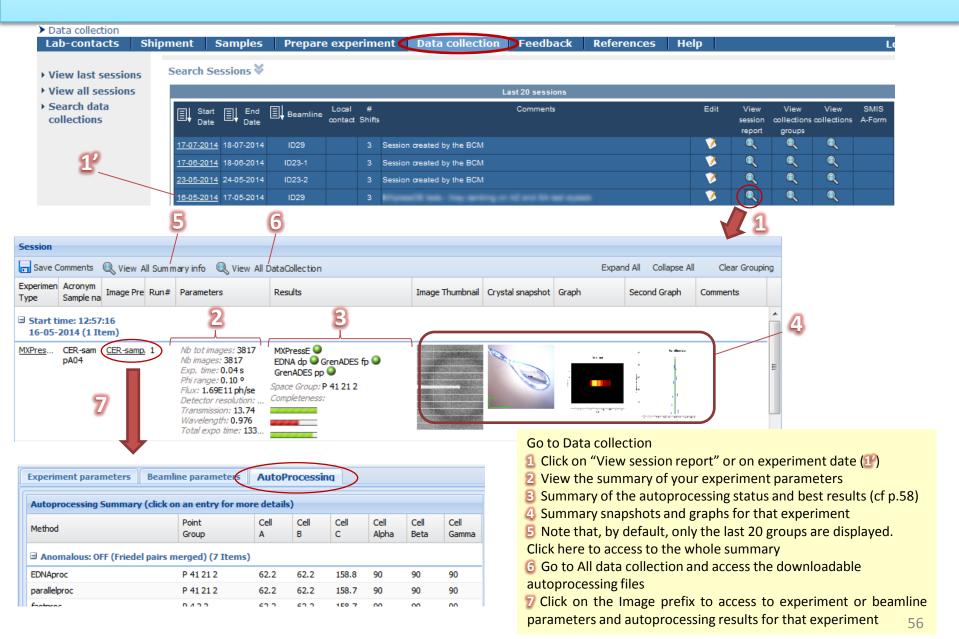
Go to Data collection

- 1 Click on "View collections"
- 2 Tick the "Sample Ranking" box of the samples that you want to rank
- 3 Select if you want to rank the results based on EDNA characterisation or autoprocessing results and click on "Rank"
- 4 View the ranking according to different parameters (clicking on the icon)
- <u>Tip</u>: In the "view collection summary", sort the results by experiment type

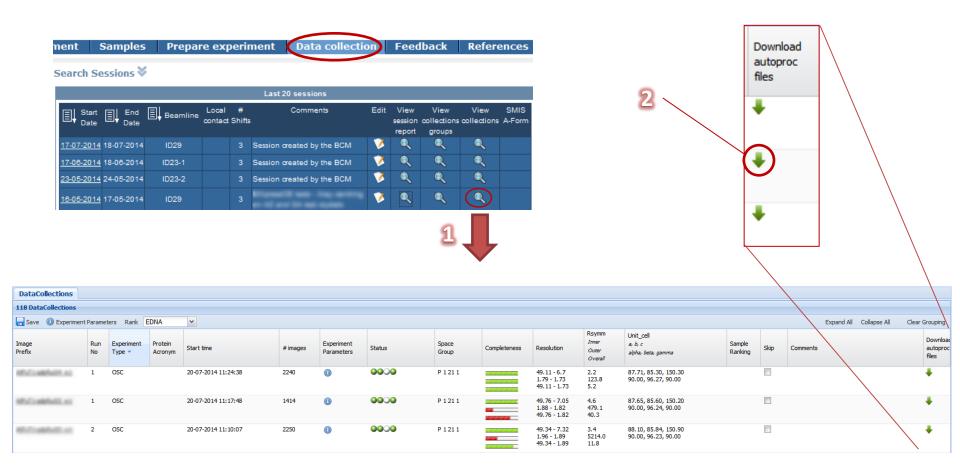


Chart

How to: View your experiment parameters and results



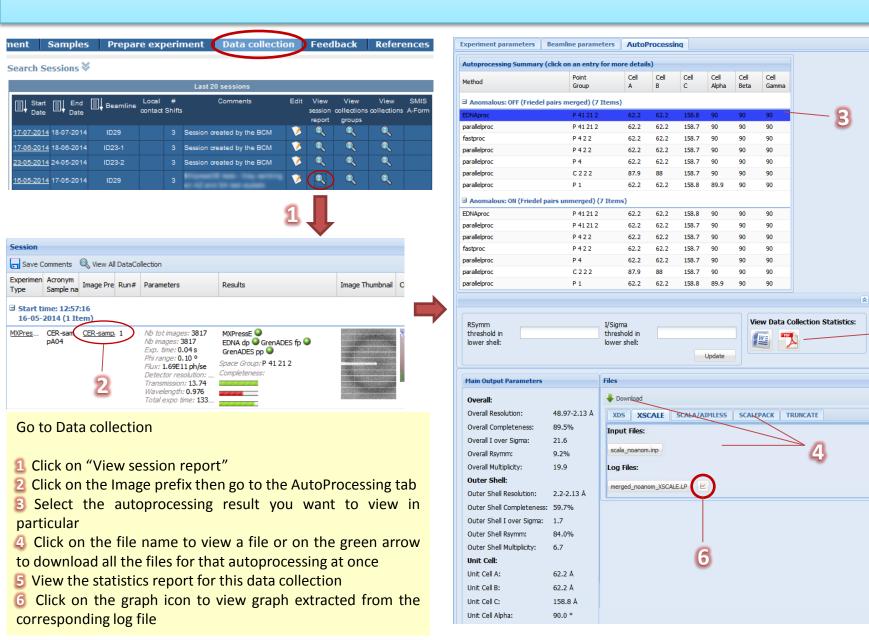
How to: View/Download all autoprocessing files for one data collection



Go to Data collection

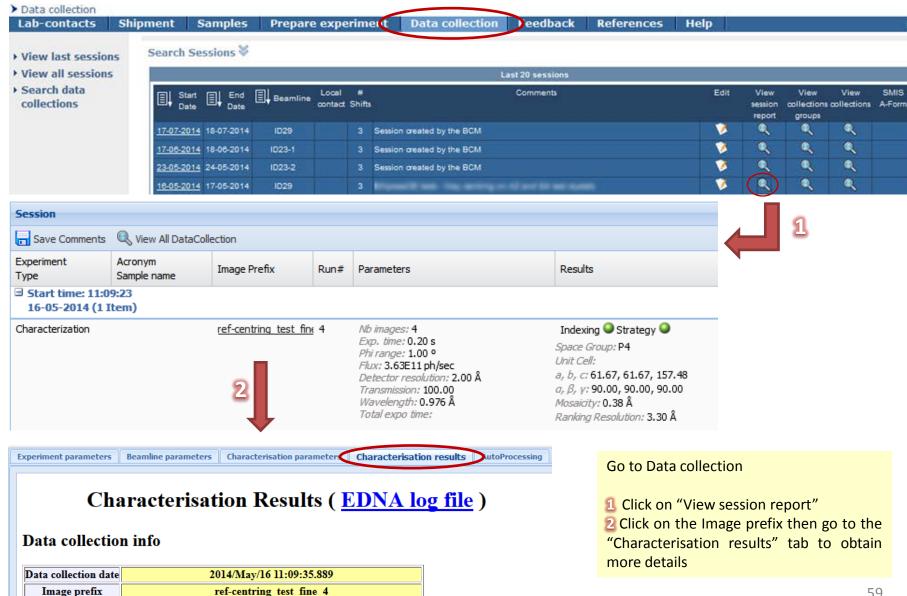
- 1 Click on "View collections"
- 2 Click on the green arrow to download all Autoprocessing files at once

How to: View/Download specific autoprocessing results

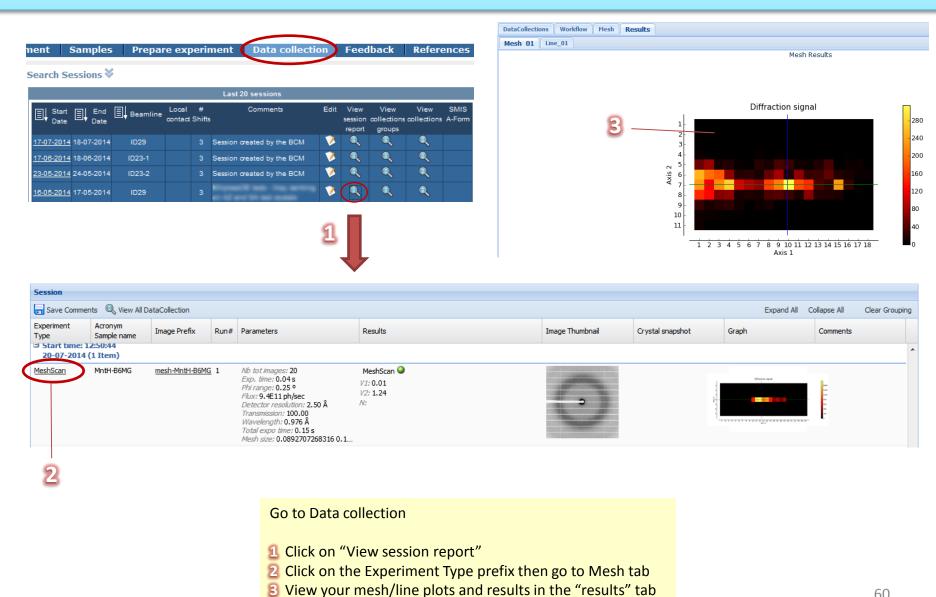


58

How to: View your processing results -EDNA characterisation



How to: View your Workflow results- Mesh scan and X-ray centring



How to: Extract reports

